



COLLIDER-ACCELERATOR DEPARTMENT

Title: EMS Training For Electronic Assembly Operations

Prepared by: M. Van Essendelft

Group: ESH&Q

Approvals

Signature on File Date: _____

ESH&Q Division Head

Signature on File Date: _____

Collider-Accelerator Department Chairman

(Indicate additional signatures)

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☐ x FS Representative: _____ Date: _____

☐ x Radiological Control Coordinator: _____ Date: _____

☐ x Chief ME: _____ Date: _____

☐ x Chief EE: _____ Date: _____

☐ x Environmental/P2 Coordinator: _____ Date: _____

☐ x QA Manager: _____ Date: _____

x ☐ Other: Signature on File Date: _____

Environmental Training Package for Electronic Assembly Operations

This package has been designed to aid in the delivery of required job-specific training for the following electronic assembly activities identified in the environmental process

- Transport of chemicals
- Storage of chemicals
- Disposal of chemicals
- Electronic assembly of wire and connectors onto printed circuit boards and assemblies using solder or conductive epoxy
- Atmospheric discharges
- Hazardous and radioactive waste generation

Your position has been determined to have significant potential to impact the environment. Thus, C-A Department Management has prepared the questions & answers on the following pages for your specific work/processes.

This environmental material is incorporated into your current job and procedure training. If you have specific questions about this information after you read the material, contact the C-A Department ESH&Q Division Head, Ray Karol (<mailto:rck@bnl.gov>).

You may keep this material as a handout and use it as a reference aid.

This specific training course is linked to your job-training assessment (JTA). You must read and acknowledge this material as part of the qualification to perform electronic assembly work. Please fill out the Read and Acknowledgement form and return it promptly.

[Read & Acknowledgement Form](#)

Environmental Process Evaluation Title: Electronic Assembly Operations

Environmental Aspects: Hazardous Waste, Atmospheric Discharge, Storage/Use of Chemicals, Radioactive Waste

Contacts for Further ESHQ Information:

Associate Chair for ESHQ, E. Lessard
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Environmental Coordinator, J. Scott
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ESH Coordinator, A. Etkin
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Quality and Assessment Manager, D. Passarello
Self Evaluation Program, A. Piper
Source Custodian, P. Cirnigliaro
Tier 1 Coordinator, A. Piper
Training Manager, J. Maraviglia
Training Records, A. Luhrs

Course Objective: Because your work activities have been identified as having significant potential to impact the environment, this course has been designed to provide you with the job-specific information that you must know to protect the environment.

1) What potential impacts to the environment are associated with your activities?

- Electronic assembly refers to the installation and interconnection of wires, mechanical connectors and electronic components onto printed circuit boards and within a piece of equipment utilizing solder. The following materials in your work may have adverse impacts on the environment if improperly handled:
 - Empty aerosol containers
 - Solder tailings
 - Wire scraps
 - Scrap metals
 - Used circuit boards
 - Rinse water containing dilute Zepride E
 - Radioactive video equipment components

2) What consequences may result if your operations were to impact the environment?

- Hazardous, industrial or radioactive waste mismanagement could contaminate the environment and incur RCRA or local agency penalties
- Improper discharges to the sanitary sewer system could result in a violation of the BNL State Pollutant Discharge Elimination System (SPDES) permit
- Improper release of radioactive materials to uncontrolled areas may result in enforcement actions under Federal Rule 10CFR835
- Improper handling of waste can create loss of regulator and public trust

3) What benefits or positive effects would you notice with improved environmental performance?

- Safer, cleaner workplace
- Clear roles and responsibilities
- Improved relationship with regulators and the public
- Control of disposal costs
- Reduced emissions

4) What role and responsibility do you have for these potential impacts and environmental performance?

My responsibilities are

- To ensure Hazardous, Radioactive and Industrial wastes are handled according to C-A procedures
- To ensure controls are in place
- To ensure controls keep working
- To take action when controls fail
- To create and keep appropriate records relative to operational controls
- To contact supervision if unsure of how to perform the work or if the procedures are unclear or incorrect

5) What controls or procedures are implemented to reduce the potential for emergency?

- [C-A OPM 8.20](#), Handling and Disposing of Hazardous Waste
- [C-A OPM 8.22](#), Handling and Disposal of Non-Hazardous and Recyclable Waste
- [C-A OPM 8.20.1](#), C-A Hazardous Waste Trailer (HWT) (90 Day Accumulation Area)
- [C-A OPM 1.15](#), Liquid, Airborne Effluents
- [C-A OPM 1.14](#), General Requirements for Liquid Storage
- [C-A OPM 2.28](#), Enhanced Work Planning
- Satellite Accumulation Area
- Chemical Management System
- Tier I program and self-assessments

6) How would you respond in an emergency to reduce the potential for environmental impact and what actions could be taken to mitigate the event?

- See [C-A OPM 3.0](#), Local Emergency Plan for the C-A Department
- Call Spill Response Hotline – X2222 or 911 (If calling from a cell phone, dial (631) 344-2222)

7) What pollution prevention and waste minimization techniques have been or could be considered to reduce or eliminate the potential to impact the environment?

- Purchase chemicals and cleaners in bulk or as concentrates and we fill reusable plastic trigger spray bottles as an alternative to using aerosol cans or disposable spray bottles
- Use less hazardous substitutes for acetone such as ethyl alcohol or isopropyl alcohol and still meet performance requirements for the job

Suggestions or comments about pollution prevention or waste minimization are always welcome by C-A management.

8) Are there any key Environmental-specific Competency Requirements for this position?

- None.

Additional Environmental Information:

Click on the items below to learn more about C-A Electronic Assembly Operations.

- [Process Assessment](#) for C-A Electronic Assembly Operations
- [Environmental Management Program](#) for C-A Combined Shops
- [Operational Control Form](#) for C-A Electronic Assembly Operations